

Attitudes of Doctors and Nurses to Family Presence During Paediatric Cardiopulmonary Resuscitation

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Abstract

Objective: To examine the attitudes of doctors and nurses to the practice of allowing family presence during resuscitation (FPDR), and to examine the factors influencing their attitudes. **Design:** An anonymous self-administered questionnaire survey was conducted among doctors and nurses in the paediatric department of a regional hospital in Hong Kong. Apart from demographic data, questions were directed to study the overall acceptance on the practice of allowing FPDR, and various factors that explained their attitudes. **Results:** The response rates for doctors and nurses were 87.9% and 92% respectively. Only 10% of the respondents supported the practice of FPDR while 55% were against the practice. There was no significant correlation of non-acceptance of the practice with the following factors: years in paediatric service; intensive care unit working experience; professional qualifications; occupations (doctor versus nurse); training in bereavement or PALS, or previous experience with FPDR. Their non-acceptance of FPDR was correlated to their health belief and their perceived cues/triggers, subjective norms, self-efficacy and behavioural control. However, on multiple regression analysis, only cues/triggers and perceived behavioural control were significant independent predictors of their attitudes. **Conclusion:** The health professionals in our department were not ready to allow FPDR. Efforts to change their attitudes should aim at setting up a mechanism that facilitates the practice and at relieving their concerns on legal liability.

Key words

Attitude of health professional; Cardiopulmonary resuscitation; Paediatric; Paediatric intensive care unit; Questionnaire

Introduction

Traditionally patient's family members were excluded from witnessing cardiopulmonary resuscitation (CPR). This practice has recently been changed in many parts of the world. Pioneering work in allowing family presence during

resuscitation (FPDR) began at the Foote Hospital, Michigan, United States of America in 1980.^{1,2} In 1995 the Royal College of Nursing and the British Association for Accident and Emergency Medicine jointly recommended that witnessed resuscitation should be considered and supported if at all possible.³ The American Heart Association International Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Guideline (2000) advocated family-witnessed resuscitation and recommended that family members' presence should be allowed during resuscitation attempts.⁴ A literature review by Boudreaux and colleagues in 2002 identified 11 primary publications in English concerning this practice. This review suggested that families wanted to be offered the option of FPDR and those who chose to remain during resuscitation generally reported that it was beneficial to the patient and themselves. Providers, however, had mixed opinions. Nurses consistently accepted the practice more than doctors,

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and the tendency to accept the practice among doctors increased with greater age and experience.⁵

There has been scanty discussion or study on FPDR in Hong Kong especially for paediatric patients. We therefore designed this questionnaire survey to find out the attitudes of doctors and nurses to FPDR, and to examine the factors that might influence their attitudes.

Methods

A self-administered questionnaire was distributed to all doctors and nurses working in the paediatric department of a regional hospital in Hong Kong. The department has about 120 beds in general paediatric, paediatric intensive care and neonatal intensive care wards. The staff normally rotates to work in various wards and all doctors and nurses have the experience of conducting CPR or the possibility of having to conduct CPR. The questionnaire was completed anonymously by each staff and returned to the researchers in a sealed envelope.

In a covering letter, we introduced the practice of allowing FPDR which was defined as the attendance of the family member(s) in a location that afforded visual or physical contact with the patient during CPR.⁶ The questionnaire consisted of two parts. The first section collected demographic data of the study subjects. The second section consisted of 19 questions that examined the subjects' overall support towards FPDR, and various factors that might affect their attitudes (Table 1). Reference was made to several of the behavioural theories that had been validated for application in behaviour modification. These included the Health Belief Model,⁷ the Theory of Reasoned Action,⁸ the Theory of Planned Behaviour⁹ and the Theory of Self-Efficacy.¹⁰ Since there was no single theory that could consistently predict behaviour, we used an integration of these behavioural theories, as recommended by Kretzer and Larson,¹¹ to design the questionnaire. Questions 1 to 4 examined the health belief, namely whether the health care professionals believed that the practice of FPDR was beneficial. Questions 5 to 7 examined the cues or triggers that helped to initiate the practice. Questions 8 and 9 examined their perceived self-efficacy and their perception of whether they were able to handle the situation well. Questions 10 and 11 examined their subjective norms, which meant their perceived social pressure to conform to the practice. Questions 12 to 18 examined their perceived behavioural control, which reflected their perception of costs, barriers or risks associated with letting the family to

stay during resuscitation. The last question 19 was a direct question asking the respondents' acceptance of the practice of FPDR. The responses to each of the 19 questions were graded on a Likert scale of one to five according to the degree of acceptance of the practice of FPDR (1=strongly support; 2=support; 3=neutral; 4=not support; 5=strongly not support). To test the consistency of respondents' attitudes, some questions were phrased so that the scores were in reverse order. The actual score for each response was shown (in bracket) for each question in Table 1.

Statistical Analysis

The demographic data were presented as mean \pm standard deviation or percentages as appropriate. The relationship of staff response to Question 19 (overall attitudes to FPDR) with staff characteristics (staff qualification, years of paediatric service, years of intensive care unit (ICU) working experience, bereavement care training, advanced life support training and previous experience of FPDR) were tested by non-parametric Kruskal-Wallis test. A p-value of less than 0.05 was regarded as significant. The influence of each predictor (health belief, cues/triggers, perceived self efficacy and subjective norm) on staff attitudes was represented by the mean of the Likert scores of their component questions. The relationship of individual predictor to the overall acceptance of FPDR was tested with Spearman correlation coefficient. Multiple regression analysis was performed to find out the independent significant factors contributing to staff attitudes to FPDR.

Results

Demographic Data

A total of 186 questionnaires were distributed and 170 (91%) were returned. One study subject did not indicate his attitude to FPDR in question no. 19 and was excluded, leaving 169 for analysis. Table 2 shows the demographic characteristics of the study subjects and the relationship to their overall attitudes to FPDR (response to question no. 19). The response rate for doctors and nurses were 87.9% and 92% respectively. Their years of service in paediatrics and their ICU working experience were 7.9 ± 4.9 years (mean \pm SD) and 4.9 ± 4.8 years (mean \pm SD) respectively. Twenty-seven percent of the study subjects had formal training in bereavement care, and 39% had passed the

Table 1 The Likert score (in brackets) assigned to each response for individual question

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Q1. Relatives can benefit from the experience by allowing proper expression of grief reaction.	(1)	(2)	(3)	(4)	(5)
Q2. Relatives can be kept informed of the progress of resuscitation.	(1)	(2)	(3)	(4)	(5)
Q3. Relatives can touch or talk to the dying patient for the last time.	(1)	(2)	(3)	(4)	(5)
Q4. Witnessing resuscitation is a traumatic experience for the family members.	(1)	(2)	(3)	(4)	(5)
Q5. It should be written in the resuscitation checklist of our department to ask if relatives would like to witness the resuscitation process.	(1)	(2)	(3)	(4)	(5)
Q6. Relatives have the right to request to stay in the resuscitation room during resuscitation.	(1)	(2)	(3)	(4)	(5)
Q7. There is enough staff in my workplace to support the family members when they witness the resuscitation.	(1)	(2)	(3)	(4)	(5)
Q8. My clinical performance will be affected by relatives' presence.	(5)	(4)	(3)	(2)	(1)
Q9. I am adequately trained to support family members when they witness the resuscitation.	(1)	(2)	(3)	(4)	(5)
Q10. My supervisor would expect me to allow relatives to stay during resuscitation.	(1)	(2)	(3)	(4)	(5)
Q11. My colleagues will not allow relatives to stay during resuscitation.	(5)	(4)	(3)	(2)	(1)
Q12. I will allow the relative to be present only if he is well informed first, and accompanied by a knowledgeable member of the bereavement team.	(1)	(2)	(3)	(4)	(5)
Q13. Resuscitation team members' emotional disturbance would be too strong with the presence of family members.	(5)	(4)	(3)	(2)	(1)
Q14. It would be difficult to stop resuscitation should relatives disagree.	(5)	(4)	(3)	(2)	(1)
Q15. It is likely that family members may have the impression that the resuscitation is chaotic.	(5)	(4)	(3)	(2)	(1)
Q16. Relatives' presence during resuscitation activities would increase our risks of litigation.	(5)	(4)	(3)	(2)	(1)
Q17. If relatives are not present, they will express anger toward staff for not doing everything possible to save the patient.	(5)	(4)	(3)	(2)	(1)
Q18. This practice constitutes a breach of confidentiality without prior consent by the patient.	(5)	(4)	(3)	(2)	(1)
Q19. I support the practice of allowing family members to be present during cardiopulmonary resuscitation.	(1)	(2)	(3)	(4)	(5)

Paediatric Advanced Life Support (PALS) course while 28% had previous experience of performing resuscitation on patients in the presence of their family members. As shown in Table 2, only 10.1% agreed or strongly agreed to the practice of FPDR while 55.1% disagreed or strongly disagreed to the practice. There was no significant

relationship between the study subjects' attitudes to FPDR and his/her seniority (as shown by years of service in paediatrics or ICU or their professional qualification), occupations (doctors versus nurses), training in bereavement care, PALS training or previous experience with FPDR.

Table 2 Demographic data and their relationship to the acceptance of "Family presence during resuscitation" (FPDR)

Attitude to FPDR (Response to Question 19)		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	P-value
No. (%) of respondents Total = 169		1 (0.6%)	16 (9.5%)	59 (34.8%)	77 (45.6%)	16 (9.4%)	
Years of service (mean ± SD)		11	9.6 ± 1.3	7.7 ± 0.5	8.2 ± 0.6	6.3 ± 1.2	0.992
Years of ICU experience (mean ± SD)		10	7.2 ± 1.6	4.9 ± 0.6	4.7 ± 0.6	3.9 ± 1.2	0.812
No. (%) of each subgroup with bereavement training	Yes = 44	1 (2%)	5 (11%)	14 (32%)	21 (48%)	3 (7%)	0.626
	No = 125	0 (0%)	11 (9%)	45 (36%)	56 (45%)	13 (10%)	
No. (%) of each subgroup with PALS training	Yes = 65	0 (0%)	7 (11%)	23 (35%)	30 (46%)	5 (8%)	0.668
	No = 104	1 (1%)	9 (9%)	36 (35%)	47 (45%)	11 (11%)	
No. (%) of each subgroup) with previous FPDR experience	Yes = 48	1 (2%)	7 (15%)	18 (38%)	19 (40%)	3 (6%)	0.056
	No = 121	0 (0%)	9 (7%)	41 (34%)	58 (48%)	13 (11%)	
Occupation, No. (%) of each subgroup)	Doctors = 29	0	5 (17%)	10 (35%)	12 (41%)	2 (7%)	0.272
	Nurses = 140	1 (1%)	11 (8%)	49 (35%)	65 (46%)	14 (10%)	
Doctors' qualification, No. (%) of each subgroup)	Fellow >5 yr = 9	0	3 (33%)	3 (33%)	3 (33%)	0	0.098
	Fellow <5 yr = 10	0	2 (20%)	4 (40%)	4 (40%)	0	
	Trainee = 10	0	0	3 (30%)	5 (50%)	2 (20%)	
Nurses' degrees, No. (%) of each subgroup)	Master = 4	1 (25%)	0	1 (25%)	1 (25%)	1 (25%)	0.394
	Bachelor = 101	0	9 (9%)	37 (37%)	45 (45%)	10 (10%)	
	Diploma = 20	0	1 (5%)	6 (30%)	10 (50%)	3 (15%)	
	None = 15	0	0	6 (40%)	9 (60%)	0	

Determinants of Attitude to FPDR

Table 3 shows the subjects' responses to each of the 19 questions. The mean Likert scores (mean ± SD) for separate groups of predictive factors were as follows: 2.69 ± 0.63 (questions on health belief), 3.24 ± 0.26 (questions on cues/triggers), 3.34 ± 0.75 (questions on self-efficacy), 3.31 ± 0.50 (questions on social norms) and 3.31 ± 0.40 (questions on perceived behavioural control). By a scale of 1 to 5, a higher score indicated a stronger disagreement to FPDR by the study subjects. There was significant correlation between each predictor and the study subjects' overall attitudes to FPDR (as shown by the score for Question no. 19). On multiple regression analysis involving the demographic variables and the predictors based on behavioural theories, only two components were significant with a R^2 of 0.77. These were cues/triggers ($B=0.665$, $p=0.000$) and perceived behavioural control ($B=1.159$, $p=0.000$).

Discussion

There were increasingly more professional bodies

supporting the practice of FPDR, but the opinions of health care workers still lacked uniformity. In the English literature, the proportion of health care workers supporting the practice varied from 2.2% to 100% (Table 4).¹²⁻¹⁶ In previous studies, nurses consistently accepted the practice more than doctors, and the tendency to accept the practice among doctors increased with increasing age and experience. There was a tendency for those taking care of paediatric patients to be more readily accepting the practice, probably because they were more accustomed to family-centered care.¹²

Our survey examined the attitudes of the majority of doctors and nurses working in the general paediatric and ICU wards in a regional hospital. It showed that the majority of our study subjects (55.1%) disagreed or strongly disagreed with FPDR, while only a small proportion (10.1%) agreed or strongly agreed with it. There was a trend of association of increasing years of paediatric and/or ICU working experience with the degree of acceptance of FPDR, though this was not statistically significant. In contrast to previous studies, our nurses and doctors had the same degree of acceptance or rejection of FPDR.

We also attempted to investigate the reasons that might

Table 3 Distribution of responses of health care professionals to each of the 19 questions (Total number 169)

Question no.	Likert score 1 No. of response (%)	Likert score 2 No. of response (%)	Likert score 3 No. of response (%)	Likert score 4 No. of response (%)	Likert score 5 No. of response (%)	Likert score Mean \pm SD
Health belief						2.69 \pm 0.63
Q. 1	16 (9.5)	85 (50.3)	38 (22.5)	26 (15.4)	4 (2.4)	2.51 \pm 0.95
Q. 2	25 (14.7)	102 (60.0)	21 (12.4)	16 (9.4)	6 (3.5)	2.27 \pm 0.95
Q. 3	43 (25.3)	92 (54.7)	17 (10.0)	15 (8.8)	2 (1.2)	2.06 \pm 0.90
Q. 4	33 (19.4)	99 (58.2)	27 (15.9)	10 (5.9)	1 (0.6)	3.90 \pm 0.80
Triggers						3.24 \pm 0.26
Q. 5	5 (2.9)	50 (29.4)	53 (31.2)	51 (30.0)	11 (6.5)	3.08 \pm 0.99
Q. 6	4 (2.4)	64 (37.6)	61 (35.9)	33 (19.4)	8 (4.7)	2.86 \pm 0.92
Q. 7	1 (0.6)	12 (7.1)	44 (25.9)	83 (49.4)	29 (17.1)	3.77 \pm 0.82
Self efficacy						3.34 \pm 0.75
Q. 8	17 (10.0)	53 (31.2)	47 (27.6)	42 (24.7)	11 (6.5)	3.14 \pm 1.10
Q. 9	1 (0.6)	19 (11.2)	48 (28.2)	89 (52.4)	13 (7.6)	3.55 \pm 0.81
Norms						3.31 \pm 0.50
Q. 10	0	7 (4.1)	106 (62.4)	53 (31.2)	4 (2.4)	3.32 \pm 0.59
Q. 11	1 (0.6)	5 (2.9)	55 (32.4)	92 (54.7)	16 (9.4)	3.29 \pm 0.68
Perceived behavioural control						3.31 \pm 0.40
Q. 12	24 (14.1)	92 (54.1)	43 (25.3)	11 (6.5)	0	2.24 \pm 0.77
Q. 13	15 (8.8)	68 (40.0)	68 (40.0)	18 (10.6)	1 (0.6)	3.46 \pm 0.82
Q. 14	2 (1.2)	28 (16.5)	95 (56.5)	29 (17.1)	15 (8.8)	3.82 \pm 0.82
Q. 15	14 (8.2)	91 (53.5)	55 (32.4)	10 (5.9)	0	3.64 \pm 0.72
Q. 16	3 (1.8)	10 (5.9)	92 (54.4)	46 (27.1)	18 (10.6)	3.57 \pm 0.76
Q. 17	5 (2.9)	48 (28.2)	67 (39.4)	43 (25.3)	7 (4.1)	2.99 \pm 0.91
Q. 18	1 (0.6)	19 (11.2)	77 (45.6)	53 (31.4)	19 (11.2)	3.41 \pm 0.86
Acceptance of the practice of FPDR						
Q.19	1 (0.6)	16 (9.5)	59 (34.9)	77 (45.6)	16 (9.4)	3.54 \pm 0.82

Table 4 Health care professional's perspective on FPDR across different studies in paediatric patients

Reporting organisations	Support	Against
Our Study (n=169)	Doctor = 17% Nurse = 8.6%	Doctor = 48.3% Nurse = 56.4%
American Association for the Surgery of Trauma and Emergency Nurse Association (n=1629) ¹²	Doctor = 2.2% Nurse = 20%	Doctor = 97.8% Nurse = 80%
American College of Chest Physicians (n=592) ¹³	22%	78%
Paediatric Intensive Care Unit United Kingdom (Doctor=19 ; Nurse=37) ¹⁴	Doctor = 68% Nurse = 100%	Doctor = 32% Nurse = 0%
Paediatric Emergency Department (n=85) ¹⁵	Doctor = 25% Nurse = 67%	Doctor = 75% Nurse = 33%
American Academy of Pediatrics Annual Uniformed Services Pediatric Seminar Meeting (n=245) ¹⁶	35%	65%

explain our staff's decision and factors that might help to change their attitudes. The main concerns of our staff were their perception of costs or risks associated with allowing the relatives to stay (their perceived behavioural control). Their worries were shown by their responses to questions 12 to 18. These included: 1) It might be difficult to stop resuscitation if the relatives disagreed; 2) Relatives might think that the resuscitation was chaotic; 3) Relatives' presence might increase the risk of litigation; 4) The practice would be a breach of confidentiality if there was no prior consent from the patient; and 5) The emotional disturbance of the resuscitation team would be too strong.

Our survey also showed that the presence of cues/triggers facilitated, and their absence hindered, the practice of FPDR. For instance, the presence of a hospital guideline to allow the practice of FPDR, and the availability of enough staff to support family members would "trigger" the front-line staff to support the practice.

The health beliefs, subjective norms and self-efficacy had some weak correlation with the acceptance of FPDR, but they were found to be insignificant on multiple regression analysis. Indeed overall our staff held the belief that the practice was beneficial to the relatives, but the prevailing norm of our staff did not support the practice. The respondents were confident that their performance would not be affected by the practice but they were concerned that they were not well trained to support the relatives in the situation.

Apparently it was not the experience, knowledge or the practical skills that were important in affecting the decision of the health care professionals. The main concern was their perceived control of the environment. The awareness of patient's rights in recent years and the promotion of accountability by the profession had led to an increase in legal claims in the medical field. Thus even though the health care professionals believed that the practice of FPDR might be beneficial to the relatives, they decided against the practice due to fear of loss of behavioural control.

From the present survey, it was clear that our staff were not ready to accept the practice. Improvement in the following areas might help to promote the practice: relatives should be well informed before entering the resuscitation scene, and be accompanied by a knowledgeable member of the bereavement team. Improving the staff numbers during resuscitation might help, including members supporting the relatives. Clearly putting the policy in the resuscitation

checklist would also facilitate its implementation.

Another issue of importance was the views of the parents. Studies involving Caucasians clearly showed that parents wanted to stay during resuscitation,¹⁷⁻¹⁹ and they would benefit from the facilitation of bereavement, the increased knowledge that everything possible has been done, the understanding of the patient's condition and care, the increased ability to provide comfort to an ill loved one and the heightened appreciation of the patient's personhood.^{1,2,20, 21} However, there were little research in this area in the Chinese population. The Chinese culture is different from that of the Caucasians. The Chinese may have different beliefs and taboos about the death process. For instance, it is not "a fortunate thing" to witness death. Bad luck will follow if you touch a corpse. The "black-haired" (the young) should not die before the "white-haired" (elderly). We need good studies to address whether the Chinese parents really want to, or benefit from, being present during cardiopulmonary resuscitation of their children.

There are several limitations to the present study. One limitation is the face and content validity of our questionnaire survey. We attempted to explore the factors that might explain our staff attitudes based on various theories of behavioural modification. While these theories, for instance the health belief model, have been applied and validated in lay persons or patients with respect to illness, there may be concern whether they are equally valid with respect to behavioural changes in doctors or nurses in the local setting. Our questionnaire also has not been validated to examine the determinants of behavioural changes. Another potential flaw is that being a pilot exploratory study, there were no open-ended questions to solicit opinions not included in the designed questions. Thus we might have missed out important factors contributing to the refusal of the practice of FPDR.

The decision to implement the practice of FPDR should be a well-prepared team decision, with support at the individual (health care workers) and organisational (hospital policies) level. With the limitations discussed above, this pilot exploratory survey helped to assess the readiness of our staff for the practice of FPDR, and to identify some of the issues that needed to be addressed before following the current trend of inviting family members to witness cardiopulmonary resuscitation of their beloved ones. We hoped that this paper could stimulate more research in this area in the future.

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